

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (**Currently Amended**) A method for increasing the capacity of signal transmission systems comprising N_T users, a single-piece receiver receiving the mixture of signals originating from the N_T users, comprising the following steps:

a) ~~determining~~ receiving, by a single-piece receiver, a mixture of signals originating from N_T users, and determining qualitative information on ~~a qualitative information of~~ the symbols estimated for each of the N_T users,

b) transmitting ~~this~~ the qualitative information to a processing block receiving an a priori information and designed to generate a quality information, on the bits forming the symbols, and

c) transmitting the quality information to a decoding step to obtain a qualitative information on the encoded bits and on the useful bits.

2. (Previously Presented) The method as claimed in claim 1, wherein step a) is performed using an MAP (Maximum a Posteriori) detector.

3. (Previously Presented) The method as claimed in claim 1, wherein the steps a) to c) are repeated until the qualitative information is fairly constant.

4. (**Currently Amended**) The ~~use of the~~ method as claimed in claim 1, wherein steps b) and c) includes transmitting for transmitters using one of the following modulation schemes: BPSK, QPSK, OFDM.

5. **(Currently Amended)** The ~~use of the~~ method as claimed in claim 2, wherein steps b) and c) includes transmitting for transmitters using one of the following modulation schemes: BPSK, QPSK, OFDM.

6. **(Currently Amended)** The ~~use of the~~ method as claimed in claim 3, wherein steps b) and c) includes transmitting for transmitters using one of the following modulation schemes: BPSK, QPSK, OFDM.